

WHAT IS CLAIMED IS:

1. A process for preparing microcapsules containing a hydrophobic liquid core material, the process comprising:

5 (1) mixing an organic liquid phase which comprises the hydrophobic liquid core material with an aqueous phase comprising a stabilizer to form a premix;

(2) homogenizing the premix by forcing the premix under pressure through a high pressure passage into a low pressure area to produce a microparticle dispersion, said microparticles having a mean size of greater than
10 1.0 micron,

(3) adding an encapsulating material at any time prior to step (4);
and

(4) curing the encapsulating material associated with the microparticles to form the microcapsules.

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2. The process of claim 1 wherein the microparticles have a mean size of greater than 2.0 microns.

3. The process of claim 2 wherein the microparticles have a mean
20 size of greater than 2.0 and less than 50 microns.

4. The process of claim 2 wherein the microparticles have a mean size of greater than 2.0 and less than 20 microns.

25 5. The process of claim 2 wherein the microparticles have a mean size of greater than 2.0 and less than 15 microns.

6. The process of claim 1 wherein the encapsulating material is added only prior to or during step (1).

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7. The process of claim 1 wherein the encapsulating material is added only after step (2).

8. The process of claim 1 wherein the encapsulating material is added prior to or during step (1) and after step (2).

5 9. The process of claim 8 wherein the encapsulating materials added prior to or during step (1) and after step (2) are different.

10 10. The process of claim 1 wherein the pressure differential between the high pressure passage and the low pressure area is greater than 2000 psi.

11 The process of claim 10 wherein the pressure differential is greater than 4000 psi.

15 12. The process of claim 1 wherein the encapsulation material is cured by heat.

20 13. The process of claim 1 wherein the encapsulation material is cured by a change in pH.

14. The process of claim 1 wherein the encapsulation material is cured by a condensation polymerization reaction.

25 15. The process of claim 1 wherein the stabilizer is a polymeric stabilizer.

16. The process of claim 1 wherein the stabilizer is a particulate stabilizer.

30 17. The process of claim 16 wherein the particulate stabilizer is a colloidal inorganic oxide.

18. The process of claim 16 wherein the particulate stabilizer is a latex.

19. The process of claim 1 wherein the stabilizer is a water soluble
5 polymer.

20. The process of claim 19 wherein the stabilizer is pectin,
sodium polystyrene sulfonate, polyvinyl alcohol, alginate, xanthan gum,
poly(vinyl methyl ether), or poly(vinyl pyrrolidone).
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21. The process of claim 1 wherein the stabilizer is an anionic
polymer mixture comprising a mixture of a first sulfonated polystyrene polymer
and a second sulfonated polystyrene polymer wherein the ratio of the weight
average polymer molecular weight of the first polymer to the second polymer is
15 greater than 2.

22. The process of claim 21 wherein the ratio of the weight
average polymer molecular weight of the first polymer to the second polymer is
greater than 4.
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23. The process of claim 21 wherein the weight average molecular
weight of the first polymer is greater than 500,000.

24. The process of claim 21 wherein the weight average molecular
25 weight of the first polymer is greater than 1,000,000.

25. The process of claim 1 wherein the stabilizer is other than
pectin and further comprises pectin.

26. The process of claim 1 wherein the microcapsules are
30 photohardenable.

27. The process of claim 1 wherein the liquid core material is a color precursor which can react with a developer material to form color.

28. The process of claim 1 wherein the encapsulating material is
5 polyurethane, polyurea, polyamide, polyester, polycarbonate, a urea/formaldehyde resin, a melamine resin, polystyrene, a styrene/methacrylate copolymer, or a styrene/acrylate copolymer.

29. The process of claim 1 wherein the encapsulating material is
10 polyurethane, polyurea, polyamide, polyester, or polycarbonate.

30. The process of claim 1 wherein the encapsulating material is polyurethane or polyurea.

31. The process of claim 1 wherein the weight average molecular
15 weight of the second polymer is less than 300,000.

32. Microcapsules containing a hydrophobic liquid core material made by the process comprising:

20 (1) mixing an organic liquid phase which comprises the hydrophobic liquid core material with an aqueous phase comprising a stabilizer to form a premix;

(2) homogenizing the premix by forcing the premix under pressure through a high pressure passage into a low pressure area to produce a
25 microparticle dispersion, said microparticles having a mean size of greater than 1.0 micron,

(3) adding an encapsulating material at any time prior to step (4);
and

(4) curing the encapsulating material associated with the
30 microparticles to form the microcapsules.

33. The microcapsules of claim 32 wherein the microparticles have a mean size of greater than 2.0 microns and less than 20 microns.

34. An imaging element comprising a support and an image forming unit comprising a developer and microcapsules containing a hydrophobic liquid core material, said microcapsules made by a process comprising:

(1) mixing an organic liquid phase which comprises the hydrophobic liquid core material with an aqueous phase comprising a stabilizer to form a premix;

(2) homogenizing the premix by forcing the premix under pressure through a high pressure passage into a low pressure area to produce a microparticle dispersion, said microparticles having a mean size of greater than 1.0 micron,

(3) adding an encapsulating material at any time prior to step (4);

and

(4) curing the encapsulating material associated with the microparticles to form the microcapsules.

35. The imaging element of claim 34 wherein the imaging element is light sensitive and heat or pressure developable.

36. The imaging element of claim 34 wherein the imaging element is light sensitive and pressure developable.

37. The imaging element of claim 34 wherein the microcapsules are photohardenable.

38. The imaging element of claim 34 wherein the microparticles have a mean size of greater than 2.0 microns.

39. The imaging element of claim 34 wherein the microparticles have a mean size of greater than 2.0 and less than 50 microns.

40. The imaging element of claim 34 wherein the microparticles have a mean size of greater than 2.0 and less than 20 microns.

5 41. The imaging element of claim 34 wherein the microparticles have a mean size of greater than 2.0 and less than 15 microns.